Center for Renewable Energy Research and Environmental Stewardship
Oct. 30, 2014 Meeting Minutes
Conn Center for Renewable Energy Research

Present: Dr. Len Peters, Cam Metcalf, Ken Seibert, Dr. Don Colliver, Art Williams, Cliff Ashburner, Chad Eames; Brian Clardy (on-phone).

Also present: John Davies, DEDI; Kenya Stump, DEDI; Lee Colten, DEDI; Greg Guess; Bill Lunsford, DEDI; Lona Brewer, DEDI; Harry Carver, DLG; John Lyons, EEC; Roberta Burnes, DAQ; John Winkle, DOE

Welcome and Introduction of Members and Visitors
Dr. Len Peters

Certification of Open Meeting
Dr. Len Peters certified the meeting was publically advertised and had no further comments. A quorum was present for the meeting to be conducted.

Approval of Meeting Minutes
Dr. Len Peters presented the minutes for approval. Motion of approval was made and seconded. The Board voted for unanimous acceptance and the approved minutes were accepted by Dr. Peters.

Presentation on Review of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units
John Lyons

Mr. Lyons summarized the legal history of GHG polies and presented an overview of the proposed Section 111(d) requirements for existing electric generating units. Mr. Lyons detailed several key dates:

- June 2, 2014 – EPA issued proposed rules for existing sources under CAA Section 111(d).
- Oct. 27, 2014 – Notice of Data Availability issued.
- Dec. 1, 2014 - Extended comment deadline for Section 111(d).
- June 1, 2015 – EPA will issue final rules for existing, new and modified/reconstructed sources.
- June 30, 2016 – Deadline for states to submit Section 111(d) implementation plans for existing sources.

Secretary Peters pointed out that the rulemaking will cover two state administrations which adds a level of complexity and difficulty. Mr. Lyons echoed the concerns given the rule's political nature.

In addition, Mr. Lyons reviewed the main features of the rulemaking including the four building blocks (heat rate improvements, re-dispatch, low emitting\ renewables, and energy efficiency) and how Kentucky's proposed rate of 1763 lbs CO2/MWh by 2030 was established. Mr. Lyons pointed out that the rate goal can be converted to mass but how to do that conversion remains unclear. Energy efficiency accounts for the largest portion of the 18.6% reduction.

A question to Mr. Lyons was if out of state renewables count if it is owned by a utility in Kentucky? Mr. Lyons stated that the issue of out of state renewables and where it is generated or consumed remains a

key issue. Secretary Peters pointed out that Kentucky gets no credit for TVA's nuclear generation even though about 25 percent of the generation is consumed in-state.

Mr. Ashburner posed the question about behind the meter renewable generation and if there is a cutoff date. Ms. Stump answered that quantifying and tracking those installations in order to count toward the 2 percent goal of renewables by 2030 remains difficult. Mr. Lyons stated that in order for actions to be included in a plan they must be quantifiable, enforceable, verifiable, non-duplicative, and permanent.

Mr. Lyons stated that the Cabinet is currently looking at the recent Notice of Data Availability (NODA) that was released by EPA. Five category of comment topics are being considered by the Cabinet:

- Economic Implications and Impacts
- Meeting Kentucky's State-Specific Goal
- Needed Clarification of Rule Components
- Unintended Consequences
- Needed Flexibility

Mr. Lyons further stated that the main legal argument to the rule involves EPA's ability to go beyond Building Block 1 or "outside the fence."The severability of the building blocks in relation to the calculated goal remains a key concern. One question is if one of the building blocks is thrown out, will EPA recalculate the state goal or move those reductions to another category. In addition concerns about rate to mass conversion, unintended events like the Polar Vortex, and keeping flexibility in the final rule were discussed as additional areas of comments.

Mr. Lyons concluded with reviewing HB 388 which the Cabinet believes limits Kentucky's plan to just "inside the fence." The law was unanimously passed and Kentucky is the only state that limits the state's ability to comply with federal law. This is the first time the state has encountered this restriction. A question was if this restriction limits the utility's ability to make decisions and if it was intended to bring Kentucky into a lawsuit. Secretary Peters stated that the Cabinet is looking into the Constitutionality of HB 388, that HB 388 does not directly restrict a utility's ability to make business decisions, and that the requirements of a federal plan can influence decisions in Kentucky because in the past, states would rather have their own plan rather under federal authority. Texas was cited as a recent example where permits were backlogged and economic development halted. In summary, the EEC has met with 23 stakeholder groups and the Cabinet is working toward meeting the Dec. 1, 2014 comment deadline.

It was mentioned that the stakeholder process was lengthy to get 1 percent energy efficiency gains and this rule significantly compresses the timeframe. How can a stakeholder process be initiated and conducted in that timeframe? Secretary Peters reminded that group that a lot of these conversations have already resulted in plan discussions. Mr. Lyons stated that there is evidence that the state goals will be adjusted, which means additional review time. Mr. Ashburner asked if things like RPS and leasing are items being considered in a plan. Mr. Lyons restated that it has to be federally enforceable and Secretary Peters even discussed that RPS requirements are under question. He stated that if renewables

are only credited where they are generated then that is a disincentive to renewable development. EPA has become so far into energy policy with limited DOE involvement that has resulted in many unanswered questions and the likelihood of long legal battles. It was mentioned that HB388 could actually help Kentucky by helping us get an additional year of review by having a state law restriction.

Finally, Mr. Lyons stated that the recent NODA proposes a different treatment of renewable generation in the formula calculating each state's goal. Renewable generation would offset fossil generation in addition to adding to the MWh, resulting in pushing rates down. The NODA was most likely the result of other states pointing out Kentucky's rate being set high in relation to other states. Ms. Burnes ask if Kentucky would develop parallel plans. Mr. Lyons stated that he would not recommend that but that North Carolina is taking that approach.

Mr. Lyons stated that EPA listened to Kentucky. A question was if Kentucky's goal is too lenient. Mr. Lyons qualified that the goal rate isn't necessarily lenient but it may be achievable given utility actions as a results of the Mercury and Air Toxic Standards along with low natural gas prices. This is in comparison to what would be required as compared to, for example, Georgia where additional measures would need to be taken.

Update on Local Government Energy Retrofit Program (LGERP)
Lona Brewer and Harry Carver

Harry Carver reviewed the Local Government Energy Retrofit Program. Mr. Carver stated that the partnership with EEC started with the Recovery Act money with the Energy Conservation Block Grants. That was one-time money that resulted in replacing a lot of ancient infrastructure like boilers and HVAC and made everyone realize how far local governments are from understanding energy usages and energy efficiency. Now the program operates under a competitive award from U.S. Department Of Energy (DOE) and given that money will most likely be scarce in the future, the question is how DLG and the Cabinet can help local governments. This led to focusing on the use of Energy Savings Performance Contracts by local governments. Ms. Brewer focused on the point that the project is multi-purpose.

- Encourage the use of Energy Savings Performance Contracting by Local Governments
- Encourage local governments to explore energy usage and comprehensive planning activities
- Look to potentially aggregate smaller projects to make them more attractive to the ESCO community

Mr. Carver pointed out that there is an educational disconnect between those paying the bills and those making policy decisions. The state was actually ahead of the curve in that there was existing performance contracting legislation but this is a different type of procurement and communicating that required technical assistance, tool development, and 50 workshops and presentations. Mr. Carver stated that the challenge is figuring out how to pay for the program over time, meaning the ongoing technical assistance and support. Ms. Brewer pointed out the need to ongoing technical assistance after performance contracts are in place for measurement and verification. Mr. Carver stated that the partnerships were integral to making the grant project a success. As an example, Mr. Carver highlighted the successes of the City of Greensburg who managed a $1.3 million project involving:

- Water Meters

- Automated Meter Reading (AMR) Technology
- New HVAC Units
- Building Automation Systems
- Lighting Upgrades

Mr. Carver and Ms. Brewer pointed out the emphasis on water and wastewater related projects. Accurate meters can result in substantial revenue increases for a community. The point was made that these contracts do not result in rate or tax increases. Ms. Brewer pointed out ongoing technical and educational assistance is needed because of elections that continually result in new people requiring new education on the concept of performance contracting.

Mr Seibert said that as a consulting firm, some of these projects are very challenging as compared to schools. It takes a lot of projects to make a project viable and they typically involve smaller buildings and measurement and verification is difficult. He did say that some of these projects are simple systems that can be easy fixes and he is glad to hear about the projects. Secretary Peters pointed out that this has been a very successful partnership.

Combined Heat and Power Initiative
Lee Colten and Greg Guess

Greg Guess and Lee Colten overviewed the concept of combined heat and power systems and mentioned a recent tour of Fort Knox. CHP is targeted to commercial and large industrial customers primarily. Mr. Guess pointed out the CHP can reduce operating costs and serve as critical infrastructure during grid downtimes. Mr. Colten pointed out that CHP is self limiting meaning it isn't appropriate for everyone. Mr. Colten and Mr. Guess reviewed that there are two operating CHP grants:

- Advancing Industrial Energy Efficiency (2-year SEP competitive grant from DOE)
- CHP Partnership (4-year sub-award through the Southeast CHP Technical Assistance Partnership)

The grant partners include the Kentucky Pollution Prevention Center (KPPC) and the Kentucky Association of Manufacturers (KAM) and Foundation for Kentucky Industry (FKI). The project involves the work of stakeholders through a steering committee and four workgroups (Education, Technical, Finance, and Policy).

Mr. Colten identified some key CHP issues:

- Site specific factors – e.g. 24/7 operation; need electricity & heat; etc. – KPPC can do screening and assessment
- Spark spread – i.e. fuel prices
- Standby rates/ratches – utility specific, negotiated
- Permitting (ongoing work with DAQ on templates or general permits)
- Financing – various options
- Third party agreements
- Legislation – ePAD and tax credits

Mr. Guess and Mr. Colten reviewed outreach efforts and upcoming workshops Nov. 6 and 13. In addition, the follow is forthcoming:

- CHP Action Plan –Should be published by end of 2014

- CHP Webinar –Planned for January 2015
- Networking Event/CHP Demonstration –Planned for March 2015
- Technical Screenings and Feasibility Study for Potential End-Users - throughout grant period (and beyond if resources allow)

It was brought up that healthcare facilities would be ideal for CHP due to 24/7 operations and thermal load requirements, in addition to data centers. Food processing plants present a fuel source but do they have the steam requirements, etc. A question as to working with the hospital association was posed. Secretary Peters stated that he had a contact there.

Conn Center for Renewable Energy Update
Dr. Mahendra Sunkara

Dr. Mahendra Sunkara discussed the research efforts from the Conn Center, personnel, and funding for research and commercialization efforts. Dr. Mahendra Sunkara reviewed high temperature carbon capture and questions efforts, biofuels, power supply, and energy efficiency projects. In addition, Dr. Sunkara reviewed funding efforts from DOE and NSF. Conn Center has set up a scientific review board to do a complete technical review of the center. Around community engagement, the Conn Center has appointed a community fellow for work with the city of Louisville. Conn Center is looking at doing some living lab work in a renovated building in Louisville focusing on biomass energy generation, charging stations, etc. Another focus would also be wounded soldier training around energy efficiency. Dr. Sunkara mentioned working with Mr. Metcalf and Ms. McCracken of KPPC on this effort. In addition, the Conn Center is engaging in efforts to transform the Solar Energy House into office space for the Center. This has proven difficult given campus space. Finally, Dr. Sunkara mentioned the upcoming 2015 Conn Center Energy Conference (March 22-24) and mentioned presenting the upcoming strategic plan to the board for review.

New Business

Ms. Stump made the board aware that the PSC has removed the previous staff opinion and DEDI has removed the link from the website. A meeting schedule has been sent out for next year. Meetings proposed are the second Wednesday of the month for February, May, August, and November. The meeting was adjourned in agreement by all.